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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------|-------------|----------------------|---------------------|------------------|
| 09/808,652 | 03/15/2001 | Linghsiao Wang | 21795 | 4933 |
| 24932 | 7590 | 06/29/2005 | EXAMINER | |
| LAUBSCHER SEVERSON | | | CHANG, RICHARD | |
| 1160 SPA RD | | | ART UNIT | |
| SUITE 2B | | | PAPER NUMBER | |
| ANNAPOLIS, MD 21403 | | | 2663 | |

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 09/808,652 | Applicant(s) WANG ET AL. | |
| | Examiner Richard Chang | Art Unit 2663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment: See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 3-5 and 8-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments and amendment with respect to claims 1-12 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 6-7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over No. 6,683,884 ("Howard") in view of US patent 6,438,134 ("Chow et al.").

Regarding claims 1 and 11-12, Howard teaches a method of scheduling for servicing a plurality of output queues associated with a communications port (for packetized data in a network switching device), the method comprising steps of:

a. selecting for servicing an output queue (block 130) holding at least one Payload Data Unit (PDU in packetized data) from the plurality of output queues (block 110A-110M), the selected output queue having an associated credit counter (block 225A-225M) holding a lowest credit value (See Fig. 1 and Fig. 2A, Col. 3, lines 15-29),

b. selectively incrementing (adding) the credit value held in the credit counter to account for the transmission of the at least one PDU having a length (target bandwidth) from the selected output queue (See Fig. 1 and Fig. 2C, Col. 3, lines 37-44), and

c. periodically decrementing (based on the round time) the credit values of a subgroup of the corresponding plurality of credit counters associated with output queues holding at least one PDU pending transmission in accordance with transmission bandwidth apportionments assigned to each output queue (to keep track of the number of bytes its corresponding queue may transmit without exceeding its target bandwidth) whereby selecting for servicing the output queue having the lowest credit value, emulated weighted fair queuing is achieved in the long run with minimal computation (See Fig. 1 and Fig. 2C, Col. 3, lines 44-49).

Howard teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“whereby selecting for servicing the output queue having the lowest credit value, emulated weighted fair queuing (WFQ) is achieved in the long run with minimal computation”.

Chow et al. teaches a bandwidth scheduler apparatus and method (See Fig. 2) for whereby selecting for servicing the output queue having the lowest credit value, emulated weighted fair queuing is achieved in the long run with minimal computation (associate credit value with WFQ bandwidth scheduler) (See Fig. 6, Col. 10, lines 52-58).

A person of ordinary skill in the art would have been motivated to employ Chow et al. in Howard in order to obtain a method of scheduling for servicing a plurality of output queues associated with a communications port and to take advantage of associating credit value with WFQ bandwidth scheduler in claims 1 and 11-12.

The suggestion/motivation to do so would have been to associating credit value with WFQ bandwidth scheduler, as suggested by Chow et al. in Col. 10, lines 52-58. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Chow et al. with the Howard to obtain the inventions specified in claims 1 and 11-12.

Regarding claim 2, this claim has limitation that is similar to those of claim 1 and Chow et al. further teach that the plurality of output queues comprises at least two output queues (block 110A-110M) (See Fig. 1, Col. 3, lines 19-21), thus it is rejected with the same rationale applied against claim 1 above.

Regarding claims 6-7, this claim has limitation that is similar to those of claim 1 and Chow et al. further teach that the transmission of PDUs is divided into transmission periods (round time) (See Fig. 2A, Col. 3, lines 35-49), thus it is rejected with the same rationale applied against claim 1 above.

Allowable Subject Matter

4. Claims 3-5 and 8-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

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limitations of the base claim and any intervening claims and if no art rejection can be applied.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RKC
rkc

Richard Chang
Patent Examiner
Art Unit 2663

Ricky Ngo
RICKY NGO
PRIMARY EXAMINER
8/12/05